CLAIMS

What is claimed is:

- 1. An insert ring for a process chamber, comprising: a ring body defining a central ring opening; and an annular step provided on said ring body and spacedapart from said central ring opening.
- 2. The insert ring of claim 1 wherein said ring body comprises silicon.
- 3. The insert ring of claim 1 wherein said ring body has a ring body thickness of about 3.5 mm.
- 4. The insert ring of claim 3 wherein said ring body comprises silicon.
- 5. The insert ring of claim 1 wherein said step has a step thickness of about 1.5 mm.
- 6. The insert ring of claim 1 wherein said process chamber comprises etching process chamber.
- 7. The insert ring of claim 5 wherein said ring body has a ring body thickness of about 3.5 mm.

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- 8. The insert ring of claim 7 wherein said ring body comprises silicon.
- 9. An insert ring assembly for a process chamber, comprising:

a wafer support for supporting a wafer;

an insert ring encircling said wafer support, said insert ring comprising a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening; and

a generally perpendicular flow space defined between said insert ring and said wafer support.

- 10. The insert ring assembly of claim 9 wherein said ring body comprises silicon.
- 11. The insert ring assembly of claim 9 wherein said ring body has a ring body thickness of about 3.5 mm and said step has a step thickness of about 1.5 mm.
- 12. The insert ring of claim 9 wherein said process chamber comprises etching process chamber.

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- 13. The insert ring assembly of claim 9 further comprising a shadow ring encircling said insert ring.
- 14. The insert ring assembly of claim 13 wherein said ring body comprises silicon.
- 15. The insert ring assembly of claim 13 wherein said ring body has a ring body thickness of about 3.5 mm and said step has a step thickness of about 1.5 mm.
- 16. The insert ring assembly of claim 15 wherein said ring body comprises silicon.
- 17. A method of preventing formation of polymer residues on an inner surface of an insert ring encircling a substrate support during processing of a substrate on the substrate support, comprising the step of:

providing a generally perpendicular flow space between said insert ring and said substrate support by providing a generally step-shaped cross-sectional profile to said insert ring.

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- 18. The method of claim 17 wherein said insert ring comprises a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening.
- 19. The method of claim 17 wherein said insert ring comprises quartz.
- 20. The method of claim 19 wherein said insert ring comprises a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening.